

Abstract:

A device for detecting parts in a material flow which influence an electromagnetic alternating field comprises an oscillator (1) and at least one transmitting coil (2) for generating an electromagnetic alternating field extending across the width of a conveying distance of the material flow. At least one detector coil (4) comprising two windings (4a, 4b) connected inversely detects the electromagnetic alternating field and generates a detection signal (DS), the phase signal portion (PS') of which is detected by means (7), from the relative motion between the alternating field and a field-influencing part. The phase signal portion (PS) and the amplitude signal portion (AS) of the detection signal are supplied to means (12) for forming a locus curve from the detection signal, which means form pairs of variates at the respective points of time from the progressions of the phase signal portion and the amplitude signal portion of the detection signal and plot these pairs of variates as a locus curve (15, 20, 30) in a system of coordinates. The locus curve (15, 20, 30) is analyzed by means (14) for evaluating the locus curve with respect to material-specific characteristics and for emitting an identification signal (ES) upon detection of a material-specific characteristic.

(Fig. 1)